

Examine the impact of Bilateral Nasal Packing on Systemic Blood Pressure and Prevalence of Complications Associated with Nasal Packing in Patients Whom Had Undergone Septoplasty

GOHAR AMIN¹, AHMED SHAKEEL AHSAN RIZVI², TARIQUE KHAN³

¹District ENT Specialist, THQ Hospital, Chakdara District Lower Dir KPK

²Assistant Professor of ENT, Shalamar Medical & Dental College Lahore

³Senior Registrar Department of ENT, University College of Medicine & Dentistry/University of Lahore Teaching Hospital Lahore

Correspondence to: Dr. Gohar Amin, Email: goharamin1@gmail.com, Cell: 03005849194

ABSTRACT

Aim: To determine the effect of bilateral nasal packing on systemic blood pressure in patients treated with septoplasty surgical procedure.

Methods: This prospective study was conducted at THQ Hospital Chakdara from 1st January 2018 to 30th June 2018. Seventy two patients of both genders having nasal septum and had undergone septoplasty after clinical examination were included. Patient's ages were ranging from 20 to 45 years. Patient's detailed history including age, sex and residency was noted after taking informed consent from all the patients. All patients were equally divided into two groups, Group A (no nasal pack inserted) while in Group B (conventional anterior nasal packing) was inserted. All the patients in both groups were put onto 24-hrs ambulatory blood pressure observation before septoplasty and after septoplasty on 2nd day.

Results: Out of all 72 patients, 40 (55.56%) patients were men while 32 (44.44%) patients were women. 30 (41.67%) patients were ages between 20 to 30 years, 28 (38.89%) patients had ages 31 to 40 years while 14 (19.44%) patient had ages more than 40 years. 40 (55.56%) patients had rural residency. In Group A there were 36 patients in whom 20 (55.56%) patients were males and 16 (44.44%) patients were females and same ratio in Group B. It was observed that mean systolic and diastolic blood pressure was increased in Group B patients after septoplasty treatment (p-Value <0.05) while there is no significant difference found in Group A patients (P-Value >0.05). Complications found after nasal packing was hemorrhage, vestibulitis and septal perforations in Group B patients.

Conclusion: It is concluded that bilateral nasal packing in patients whom had treated septoplasty found increase in systolic or diastolic blood pressure. We found no significant difference in patient who had not underwent nasal packing.

Keywords: Systemic blood pressure, Bilateral nasal packing, Septoplasty

INTRODUCTION

Nasal packing is one of the most common clinical procedures found in worldwide ENT department of medical health care centers. ANP procedure applied due to many conditions such as endoscopic sinus surgeries, septoplasties, nasal fractures and chronic nasal infections etc. Worldwide, repairing of the obstructed nasal septum is the most common surgical treatment performed in Ear, Nose and throat departments. Septoplasty surgical procedure is used for treatment of nasal obstructions due to the infection in the septum of the nose.¹ Commonly anterior nasal packing was performed in all cases after septoplasty. The purpose of inserting intra nasal pack bilaterally is to prevent post-operative bleeding, and also prevent septal hematoma and nasal synechia.²⁻⁵ Patients whom underwent intranasal packing bilaterally may faced problems like nasal pain, trauma to nasal mucosa, nasal infection, sleeping problem etc.⁶ Several studies regarding septoplasty shows nasal packing is not a mandatory procedure after septoplasty.⁷ In different settings there is different types of nasal packing have been used such as ribbon gauge soaked in bismuth iodoform paraffin paste, liquid paraffin, antibiotic ointments and others⁸. Von

Schoenberg et al reported that the prevalence of pain is high in patients whom had underwent nasal packing after surgery and removal of packing is the most painful procedure in the post-operative period. He resulted a higher rate of complications (including hemorrhage, vestibulitis and septal perforation) in the packed group, though it is not clear if this difference reached statistical significance.⁹ Several suturing techniques have also been described to approximate the mucosal flaps after septal surgery in order to reduce the complication rate^{10,11}.

Few studies have been shown the effect of nasal packing bilaterally on systolic and diastolic blood pressure after septoplasty, the results significantly shows the increase in both the systolic and diastolic blood pressure in patients after bilateral intranasal obstruction by nasal packing¹².

The recent study was conducted to evaluate the effect of bilateral nasal packing on systolic or diastolic blood pressure in patients whom had treated with septoplasty. Also to determine the prevalence of complication associated with intranasal packing and moreover, to provide better treatment and to reduce the complications rate.

MATERIALS AND METHODS

This prospective study was conducted at THQ Hospital Chakdara from 1st January 2018 to 30th June 2018.

Received on 03-07-2020

Accepted on 13-11-2020

Seventy two patients of both genders having nasal septum and had undergone septoplasty after clinical examination were included. Patient's ages were ranging from 20 to 45 years. Patient's detailed history including age, sex and residency was noted after taking informed consent from all the patients. All patients were equally divided into two groups, Group A had no nasal pack inserted while in Group B conventional anterior nasal packing was inserted. All the patients in both groups were put onto 24-hrs ambulatory blood pressure observation before septoplasty and after septoplasty on 2nd day. Complications associated with nasal packing were also observed. All the statistical data was analyzed by computer software SPSS 21.

RESULTS

There were 40 (55.56%) male patients while 32 (44.44%) patients were women. Thirty (41.67%) patients were ages between 20 to 30 years, 28 (38.89%) patients had ages 31 to 40 years while 14 (19.44%) patient had ages more than 40 years. Forty (55.56%) patients had rural residency.

All the patients were equally divided into two groups each group had 36 patients. In Group A there were 36 patients in whom 20 (55.56%) patients were males and 16 (44.44%) patients were females and same ratio in Group B. It was observed that mean systolic and diastolic blood pressure was increased in Group B patients after septoplasty treatment (p-Value <0.05) while there is no significant difference found in Group A patients (P-Value >0.05). Complications found after nasal packing was hemorrhage in 6 (16.67%) patients, vestibulitis in 2 (5.56%) patients and septal perforations in 3 (8.33%) patients whom had treated with intra nasal packing bilaterally in Group B patients.

Table 1: Demographical details of patients

Variable	No.	%
Gender		
Males	40	55.566
Females	32	44.44
Age (years)		
20 to 30	30	41.67
31 to 40	28	38.89
>40	14	19.44
Residency		
Rural	40	55.56
Urban	32	44.44

Table 2: Group and gender wise distribution of patients

Gender	Nasal Packing (n=36)	Without Nasal Packing n=36
Males	20 (55.56%)	20 (55.56%)
Females	16 (44.44%)	16 (44.44%)

Table 3: Comparison of Before and after surgery results of blood pressure without nasal packing. (n=36)

Characteristics	Before Surgery	After septoplasty 2nd day	P-Value
Mean systolic BP	118.65	118.75	>0.05
Mean diastolic BP	74.9	75.2	>0.05

Table 4: Comparison of Before and after surgery results of blood pressure with nasal packing (n=36)

Characteristics	Before Surgery	After septoplasty 2nd day	P-Value
Mean systolic BP	118.95	130.15	<0.05
Mean diastolic BP	74.9	90.1	>0.05

Table 5: Prevalence of complications associated to nasal packing

Complications	No.	%
Hemorrhage	6	16.67
Vestibulitis	2	5.56
Septal Perforations	3	8.33

DISCUSSION

Nasal packing bilaterally can cause several physiological and anatomical effects on patients body including middle ear pressure, cardiovascular and respiratory system.¹³⁻¹⁷ In our study, we observed that the inserting of intra nasal packing after septoplasty resulted increase in systolic and diastolic blood pressure. These results show similarity to the study conducted by Yigit et al¹⁵ in which they reported increase in blood pressure in patients who had underwent anterior nasal packing after nasal surgery.

In this study, out of all 72 patients, 40(55.56%) patients were men while 32(44.44%) patients were women. A study conducted by Dawood et al¹⁶ in which the male patients population was equal to the female patients. The difference may be due to the number of patients visited at our hospital and the time duration of the study. 30(41.67%) patients were ages between 20 to 30 years. A study conducted by Surender S et al¹⁷ reported 60% of patients were ages between 20 to 30 years. 28 (38.89%) patients had ages 31 to 40 years while 14 (19.44%) patient had ages more than 40 years. These results shows similarity to the study conducted by Mohan¹⁸ in which patients were ranging between 20 to 50 years and mostly patients were ages between 20 to 30 years.

In our study, we found mean systolic and diastolic blood pressure was increased in Group B (with nasal packing) patients after septoplasty treatment (p-Value <0.05) while there is no significant difference found in Group A (without nasal packing) patients (P-Value >0.05). These results shows similarity to some other studies conducted regarding effects of bilateral nasal packing after septoplasty, in which the mean systolic and diastolic blood pressure was increased in patients whom had treated with anterior nasal packing.¹⁹⁻²¹

We also observed complications associated with anterior nasal packing in patients after septoplasty surgical treatment. The most common complication was hemorrhage found in 16.67% patients out of 36 patients, vestibulitis in 5.56% and septal perforations in 8.33% patients respectively. These results was same to the study conducted by Samad et al¹⁰ in which they reported hemorrhage was the most frequent complication resulted 14% in patients whom underwent nasal packing after nasal surgeries. Nasal packing after septoplasty should be reserved for the patients with increased risk of bleeding Erkan Eşki, et al. reported that effects of nasal pack use on surgical success in septoplasty re-nasal pack use does not affect surgical success and complication rates in septoplasty. Pack-free septoplasty with the trans-septal suture technique is an effective method in the treatment of septal deviation²².

CONCLUSION

Nasal packing is one of the most common procedures performed in ENT departments. In this study, we concluded

that, nasal packing not performed on patients whom had cardiovascular or respiratory disorders. Moreover, bilateral nasal packing in patients whom had treated septoplasty found increase in systolic or diastolic blood pressure. We found no significant difference in patient who had not underwent nasal packing.

REFERENCES

- Umihanic S, Brkic F, Osmic M, Umihanic S, Imamovic S, Kamenjakovic S, et al. The discrepancy between subjective and objective findings after septoplasty. *Med Arch* 2016; 70(5): 336–8.
- Haroon Y, Saleh HA, Abou-Issa AH, Nasal soft tissue obstruction improvement after septoplasty without turbinectomy. *Eur Arch Otorhino-Laryngol* 2013; 270(10): 2649–55.
- Kuduban O, Bingol F, Budak A, Kucur C, The reason of dissatisfaction of patient after septoplasty. *Eur J Med* 2015; 47(3): 190–3.
- Weber R, Hochapfel F, Draf W. Packing and stents in endonasal surgery. *Rhinology*.2000; 38(2):49-62.
- Awan MS, Iqbal M. Nasal packing after septoplasty: a randomized comparison of packing vs no packing. *ENT J* 2008; 897(11):624-7.
- Baumann R. Septoplasty update. *Laryngorhinootologie* 2010; 89(6): 373–84.
- Alotaibi A, Almutlaq BA. Post-surgical outcomes of patients undertaken septoplasty with regard to initial clinical complains. *Res Otolaryngol* 2017; 6(6): 73–80.
- Eski E, Yilmaz I. Septoplasty without nasal packing: functional outcomes and complications. *J Otolaryngol ENT* 2015; 3: 62-5.
- Von Schoenberg M, Robinson P, Ryan R. Nasal packing after routine nasal surgery: is it justified? *J Laryngol Otol* 1993;107(10):902–5.
- Samad I, Stevens HE, Maloney A. The efficacy of nasal septal surgery. *J Otolaryngol* 1992;21(2):88–91.
- Nunez DA, Martin FW. An evaluation of post-operative packing in nasal septal surgery. *Clin Otolaryngol Allied Sci* 1991; 16(6):549–50.
- Yilmaz MD, Onrat E, Ali Altuntas A, Kaya D, Kahveci o, Derekoy S. The effects of nasal pack on systemic blood pressure after septoplasty. *KBB-Forum* 2004;32: 3-4.
- Kristensen S, Bjerregaard P, Jensen PF. The value of nasal packing with airway tube. *Clin Otolaryngol* 1996; 21:331-4.
- Madani SA, Modanluo M. The incidence of nasal septal deviation and its relation with chronic rhinosinusitis in patients undergoing functional endoscopic sinus surgery. *JPMMA* 2015; 65(6): 612–4.
- Yigit O, Cinar U, Uslu B. Impact of nasal packing after septoplasty. *Otolaryngology* 2002;9:347-50.
- Dawood S, Bakht A, Aamia A. Effect of bilateral nasal packing on systemic BP after septoplasty. *PJMHS* 2017; 11(4): 1318-20.
- Surrender S, Jagat S, Vikas S et al. Effect of Nassal Packing. 2016(7).2:44-47.
- Mohan C, Srivastav A, Shukla P. Effect of nasal packing on middle ear pressure. *Int J Adv Integ Med Sci* 2016;1(2):52-56.
- Kelly JT, Prasad AK, Waxier AS. Detailed flow pattern in the nasal cavity. *J Appl Physiol*..2000;89:323-37.
- Alharethy S, Aldrees T, Aljrid R, Alanazi A, Algaryan SK, Jang YJ, Common nasal deformities among rhinoplasty patients in a university hospital in Saudi Arabia. *Ann Saudi Med* 2017; 37(3): 207–11.
- Etigadda D, Majeed D. Clinical and radiological evaluation of deviated nasal septum in classifying and surgical management of the deviated septums. *IOSR J Dent Med Sci* 2017; 16(2): 13–20.
- Eşki Erkan, Güvenç IA, Hızal E, Yılmaz I (2016) Effects of nasal pack use on surgical success in septoplasty. *Kulak Burun Bogazlhtis Derg* 34(2): 208- 212.